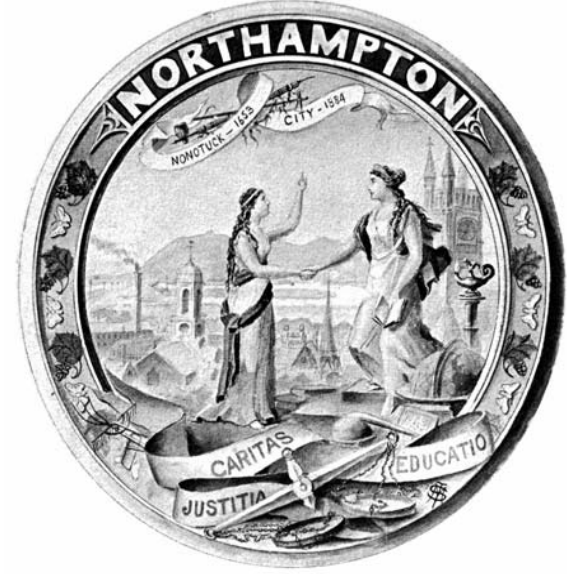


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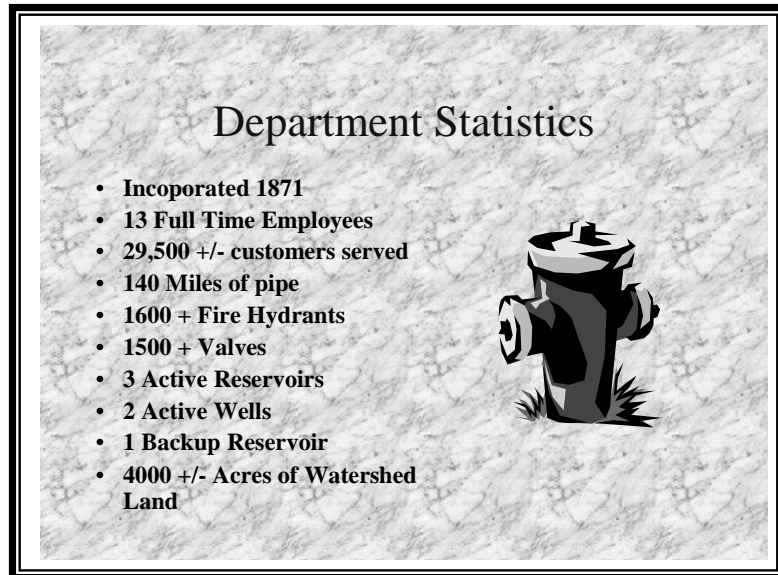
DEPARTMENT of PUBLIC WORKS

WATER QUALITY REPORT 2006

UTILITY ID: MA 1214000

***CITY OF NORTHAMPTON
DEPARTMENT OF PUBLIC WORKS
WATER DIVISION***

***136 YEARS of SERVICE
1871 - 2007***



OUR MISSION AND GOALS

- **To provide, in sufficient amounts, safe, clean, and potable drinking water**
- **To meet or exceed statutory regulations set by the Environmental Protection Agency and the Massachusetts Department of Environmental Protection**

What can I do to help clean up stormwater?

Keeping stormwater clean is up to each of us. Here is a list of a few ways that you can help clean up storm water:

- Apply lawn and garden chemicals sparingly and according to directions. Use natural alternatives to chemical fertilizers and pesticides. If you must use chemicals, test your soil to determine the right amount.
- Keep litter, pet wastes, leaves, and debris out of storm drains.
- Dispose of used oil, antifreeze, paints, and other household chemicals properly. The Northampton DPW has a household hazardous waste collection every year in May.
- Clean up spilled brake fluid, oil, grease, and antifreeze. Do not wash them into the street where they will reach local streams and lakes. Use absorbent material such as kitty litter or speedy dry to contain and clean-up spills, and dispose of it properly.
- Control soil erosion on your property by planting ground cover and stabilizing erosion-prone areas.
- Participate in neighborhood clean-up activities.
- Don't hose down driveways or sidewalks. Sweep paved areas, don't hose sand, leaves and trash into the road.
- Be a pollution detective. Call the DPW to report any odd smells from a storm drain or garbage being discharged out of a pipe.
- Reduce the amount of rainwater and snowmelt running into the street. Divert runoff from pavement, roofs, and sump pumps to grassy, gravel, planted or wooded areas so stormwater can seep slowly into the ground. Use a rain barrel to store extra water for irrigation or build a rain garden to absorb storm water. Use permeable pavement that allows rain and snowmelt to soak through your driveway and walkways.

With a little help from everyone we can clean up the stormwater and keep pollution out of Northampton's many rivers, streams, lakes, and ponds in addition to the Mill River, the Connecticut River, Fitzgerald Lake, and our many valuable wetlands.

For more information about stormwater and what you can do to help contact Doug McDonald at the DPW at 587-1582 x308 or email at dmcDonald@nohodpw.org.

Stormwater:

Northampton has many pipes and drains that move stormwater from rain and snowmelt off of streets, parking lots, sidewalks, and developed areas and deposits it to rivers, streams, ponds, wetlands and other areas all over the city. Throughout Northampton, the DPW owns and maintains approximately 3,750 catch basins and inlets that collect stormwater and more than 60 miles of pipe, drainage channels, and culverts that carry this water and discharge it to more than 232 outfalls, throughout the City. Each year, the DPW cleans out catch basins, sweeps the streets, and repairs the drainage system, when needed, to keep it functioning cleanly and efficiently.



Is stormwater clean?

The DPW's stormwater system was built to move stormwater off streets and other areas quickly to reduce flooding during rainstorms. It does not clean or treat this water before discharging it. When stormwater flows into a drain, dirt and pollutants from streets and parking lots is carried into the drains and then discharged to a stream, wetland or other water body. Some of the pollutants that commonly get into stormwater are:

- Oil, gasoline, antifreeze, and other pollutants from cars;
- Pet wastes;
- Fertilizers and pesticides from lawns and gardens;
- Sediment from construction areas;
- Salt and sand during the winter;
- Soaps and detergents from car washing;
- Leakage from dumpsters, grease storage, and other garbage storage; and
- Any other debris that ends up in the roads, parking lots, sidewalks, and other developed areas.

2006

CONSUMER CONFIDENCE REPORT:

This is our annual report on the quality of water delivered by the City of Northampton's Department of Public Works' (DPW) – Water Division. Included are details about where your water comes from, what it contains, the health risks associated with any contaminants, and how it compares to Environmental Protection Agency's (EPA) and state standards. Please read this report carefully and, if you have questions call the number listed at the end of this report.

WHAT'S IN THE WATER WE DRINK?

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contamination. The presence of contaminants does not necessarily indicate that water poses a health risk.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek preventative advice from their health care providers.

In order to ensure that tap water is safe to drink, the EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. The Food & Drug Administration (FDA) regulations establish limits for contaminants in bottled water that must provide the same protection for public health.

EPA/Center for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbial contaminants and more information about contaminants and potential health effects can be obtained by calling the:

Safe Drinking Water Hotline:

1 (800) 426-4791

SOURCES OF DRINKING WATER:

Sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring materials and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.



CONTAMINANTS THAT MAY BE PRESENT IN DRINKING WATER SOURCES INCLUDE:

Microbial contaminants, such as viruses and bacteria which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife; **Inorganic Contaminants**, such as salts and metals can be naturally occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining and farming; **Pesticides and herbicides**, may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses; **Organic chemical contaminants**, including synthetic and volatile organic chemicals that are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems; **Radioactive contaminants**, can be naturally occurring or be the result of oil and gas production, and mining activities.

Who Do I Call if I Have Questions?

If you have questions about the proper disposal of grease that is generated from a home, restaurant or food preparation facility you should contact: Northampton Wastewater Treatment Plant at 587-1092, Monday – Friday 7:00 AM to 3:00 PM



What Else Can I Do To Help Protect Our Water Resources?

If you see or smell sewage coming out of the ground or from a manhole, call the DPW **immediately**, at 587-1570. The DPW will investigate every call.

With limited personnel in the Department of Public Works' – Sewer Division, it is impossible for our workers to be everywhere and see everything. Many times a broken pipe or clogged manhole is located off of the road where it cannot be seen by a worker driving by in a truck. When you notice it and call the DPW you are helping to prevent pollution of groundwater and surface water streams and wetlands.

OTHER WATER QUALITY ISSUES:

Just as water flows to our customers through pipes, it also flows away from our customers through pipes. Rarely, do people think about where the water and wastes go and how it is treated, until there is a problem. In this corner, we would like to raise your awareness about the where the water goes and how you can prevent problems in your house and to the environment.

Let's Talk About Grease – Is Grease a Problem?

The presence of fats, oil and grease can result in operational problems both in the sanitary sewer system (the pipes) and at the Wastewater Treatment Plant (the treatment). Grease from homes, restaurants and food preparation operations can turn to a gel (solidify) on the inside of sanitary sewer pipes causing a restriction of the flow, just like cholesterol restricts the flow of blood through our arteries and veins.

Pipe blockages have resulted from this grease buildup, causing raw sewerage to backup into the basements of homes and businesses. It has also caused damage to the equipment and controls at the Wastewater Treatment facility. High concentrations of fats, oil and grease in the wastewater inhibit the biological process used to treat domestic sewage, which results in the odors we sometimes smell in the vicinity of the plant.

Where Does the Grease Come From?

Grease discharges are predominantly from washing and cleaning operations and not from fry-o-lators or deep-frying units as most people think. The pot-washing sink, pre-rinse station (prior to the dishwasher), trenches and floor drains fed by soup kettles, automatic and manual ventilation hoods, etc. are major sources of grease discharges to the sewer system.

How Can We Control and Minimize Grease Discharges?

In the home, wipe excess grease off of plates, pots and pans with a paper towel, and then dispose of it in the trash; let grease cool in a container and then dispose of it in the trash, instead of down the drain. Grease generated from restaurants and food preparation should have a properly sized grease recovery unit.

WHERE DOES NORTHAMPTON'S DRINKING WATER COME FROM?

In 2006, approximately 98% of Northampton's drinking water came from three surface water reservoirs. Our system draws unfiltered water from the Francis P. Ryan and the West Whately Reservoirs, both located in West Whately and the Mountain Street Reservoir located in Williamsburg and Hatfield. The water is piped to Northampton through transmission lines.

How is it treated?

The water is chlorinated prior to reaching Northampton to prevent dangerous levels of coliform and bacteria from entering the water supply lines. Once the water reaches Northampton, it is treated at our Corrosion Control Facility in Leeds. This treatment includes the addition of Zinc Orthophosphate and Sodium Hydroxide. We add these chemicals because Northampton's source water, like many other drinking water supplies in New England, is naturally corrosive (having a pH of less than 7.0). This means the water supply has a tendency to corrode and dissolve the metal piping it flows through. This not only damages pipes, but can also add harmful metals such as lead and copper to the water. For this reason, it is beneficial to add chemicals that provide a protective pipe coating and make the water's pH neutral or slightly alkaline.

Northampton adds zinc orthophosphate, which is often referred to as an inhibitor and is what coats the inside of the pipe. It contains a small concentration of phosphate. We also add sodium hydroxide, which raises the pH to a non-corrosive level. Testing conducted throughout the water system in 2006, has shown that this treatment is effective at reducing lead and copper concentrations.

All of the chemicals used by the DPW are approved by one of the following organizations: National Sanitation Foundation, or UL, both accredited by the American National Standards Institute (ANSI). These chemicals also have to meet performance standards established by the American Water works Association (AWWA).

HOW MUCH WATER DID NORTHAMPTON USE IN 2006?

In 2006, the City of Northampton supplied approximately 1.13 billion gallons of water to you, its customers. On average, the city supplied 3.1 million gallons of water each day. However, the most water used in one day was 4.16 million gallons! It is on days like that we supplement the water drawn from our reservoirs with our two wells, located in Florence.



SOURCE WATER ASSESSMENT PROGRAM:

In 2003, the Department of Environmental Protection (DEP) completed a Source Water Assessment Program (SWAP) Report. This report included a review of our watershed lands and aquifer protection zones. The largest threats to our water supply identified, were from residential fuel storage and some commercial uses, but overall Northampton provides substantial protection for our water supplies. If you are interested in the details of the report, more specific information is located within the report and may be obtained from the DEP in Springfield.

WHAT IS A CROSS CONNECTION CONTAMINATION?

A cross connection may occur whenever contaminated or non-potable water flows backwards into a drinking water supply line. This may cause dangerous situation if the water line is connected to a piece of equipment that contains a harmful liquid, such as a boiler, an air conditioning system, or a fire sprinkler system, and the pressure in the water line drops (due to a fire, a water main break, etc.). The drop in pressure can cause that harmful liquid to be drawn back into your drinking water supply.

Is this only a concern for businesses?

No! A cross contamination and back flow situation is not limited to commercial and industrial sites, only. An outside hose connection can cause a dangerous condition at your home. If the hose is used to spray fertilizers, pesticides, or weed killers and the water pressure drops, the liquid you are spraying can be drawn back into the drinking water pipes in your home, creating a dangerous and sometimes life threatening situation.

How can you prevent a cross connection at your house?

To **prevent** a cross connection, **never submerge** hoses in buckets, pools, tubs, or sinks and do not use spray attachments without a backflow prevention device installed on the faucet. These devices are inexpensive and available at most hardware stores and home-improvement centers. Just ask for a hose bib. One should be installed on all threaded faucets around your home, both inside and out, anywhere you may want to connect a hose to.

WHAT CAN BUSINESSES DO TO HELP?

If you are the owner of an industrial, commercial, or institutional property, you **must** have your facility's plumbing surveyed for and protected against cross connections. This way you help protect your employees and the public water supply from potential contamination.

COMPLIANCE WITH THE LEAD AND COPPER RULE:

In 2000, Northampton began treatment of our water to stabilize the pH and establish a protective coating on the inside of our pipes, to prevent lead and copper from entering your drinking water. During 2006 the DPW **remained in compliance** with the Lead & Copper Rule, as a result, the Massachusetts DEP has reduced the monitoring requirements for Lead & Copper testing to once every three years because the source is not at risk of contamination.

Why do we treat the water to prevent lead and copper from entering your drinking water?

Treating our water supply to prevent lead and copper from getting into your drinking water is important because infants and young children are typically more vulnerable to lead in drinking water than most people. Infants and children who drink water, containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning disabilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.

It is possible that lead and copper levels at your home may be higher than at other homes in Northampton as a result of the materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested. However, to reduce the possible lead content from your tap, run the cold water 30 seconds to 2 minutes until it gets cold, before drinking your tap water, and never use the hot water for drinking or cooking as hot water is likely to contain higher levels of lead. If you want additional information, call the:

Safe Drinking Water Hotline at:
1 (800) 426-4791

WHY SHOULD YOU CONSERVE WATER?

In 2001 - 2002, the Northeast experienced less than normal rainfall amounts, which severely impacted water levels in Northampton's reservoirs. Although the levels are presently at full capacity, we urge all our customers conserve water so there will be enough water now and in the years to come. For tips on ways to prevent water waste and links to web sites with additional information, please visit **our** web site at: <http://www.nohodpw.org>.



April 2002 – F.P. Ryan Reservoir – drought conditions



April 2003 – F.P. Ryan Reservoir – Same view, at capacity

WHAT'S THE STATUS OF THE WATER FILTRATION PLANT?

In December of 2001, the City signed a Consent Order with the Department of Environmental Protection (DEP). The Consent Order required construction of a water filtration plant to begin in the spring of 2003, and be operational by August of 2005. After many permitting delays, construction began in December 2005. The plant should be completed and operational by the end of November 0f 2007. Until then, the DPW's Water Division will continue to protect, chlorinate and monitor its water supply and watershed land in compliance as required under a Waiver from Filtration, and continue with its commitment to provide all of our customers with safe and good quality water.

WATER TREATMENT PLANT CONSTRUCTION



N/A: Not Applicable

N/D: Non-detectable with type of testing conducted

NTU: Nephelometric Turbidity Units

90th Percentile: Out of every 10 homes tested for lead & copper levels, 9 were at or below this level. We collected 60 samples therefore the 90th percentile would be the 54th highest sample (60 x 0.9).

ppb: Parts per billion, or micrograms per litre (µg/l)

ppm: Parts per million, or milligrams per litre (mg/l)

***pCi/L Picocuries per litre:** The measurement of the natural rate of disintegration. The MCL for Beta particles is 4 mRem/yr. EPA considers 50 pCi/L to be the level of concern for Beta particles.

Treatment Technique (TT): A required process intended to reduce the level of a contaminant in drinking water.

Turbidity: A measure of the cloudiness of the water. It is a good indicator of water quality. We measure turbidity in NTUs (Nephelometric Turbidity Units).

****Unregulated Contaminants:** Contaminants for which the EPA has not established drinking water standards. Some of these chemicals are unregulated, because there is little toxicity information available for these compounds. The purpose of monitoring unregulated contaminants is to assist EPA in determining their occurrence in drinking water and whether further regulation is warranted. For health risk information on these chemicals, please contact the DEP Office for Regional Standards (ORS) at: (617) 556-1157.

Variances & Exemptions: State or EPA permission not to meet an MCL or a treatment technique under certain conditions.

2006 WATER TESTING INFORMATION

The DPW is committed to supplying water that meets or exceeds State and Federal standards. As a result of our efforts, the DEP has reduced some of our monitoring requirements, for certain contaminants, to less than once per year. This reduction was allowed because our reservoirs and wells were not at risk from being contaminated.

TABLE ABBREVIATIONS & DEFINITIONS:

Action Level (AL): The concentration of a contaminant that, if exceeded, triggers treatment or other requirements that a water system must follow.

Detected Level: This column represents an average of sample results collected during 2004. If only one sample was collected, there will not be a range listed in the adjacent column.

Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs (see below) as feasible using the best available treatment technology.

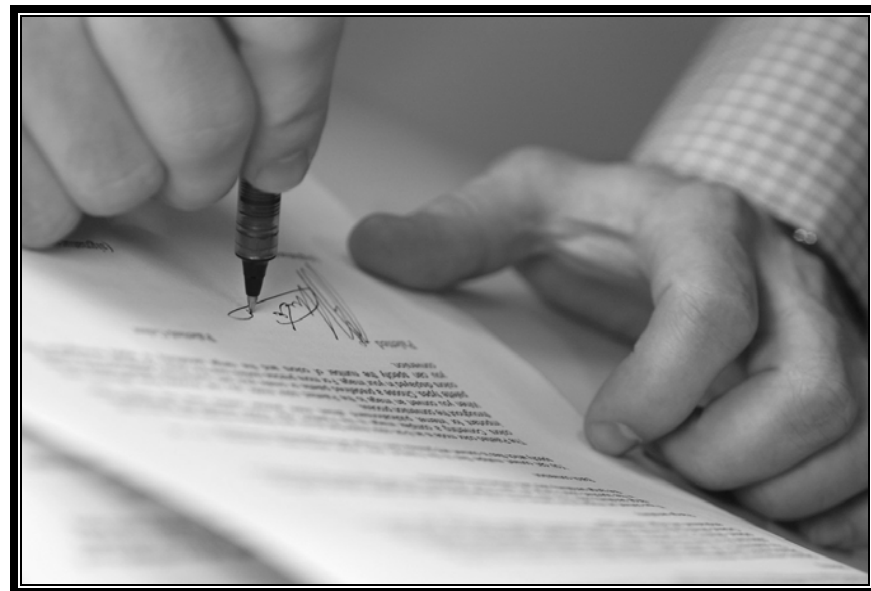
Maximum Contamination Level Goal (MCLG): The level of a contaminant in drinking water below, which there is no known or expected risk to health. MCLGs allow for a margin of safety.

Maximum Residual Disinfectant Level (MRDL): The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

Maximum Residual Disinfectant Level Goal (MRDLG): The level of a drinking water disinfectant below, which there is no known expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

WHO MAKES THE DECISIONS ABOUT OUR DRINKING WATER?

The Board of Public Works does! They have regular meetings on the 2nd and 4th Wednesdays of each month, starting at 7PM at the DPW offices, 125 Locust Street. The Board encourages public participation and interest with how decisions are made, so feel free to attend.



This report was compiled by:

Paulette L. Kuzdeba, AICP, Senior Environmental Planner and Paul Peterson, Water Treatment Operator at the DPW. If you have any questions about our water quality, call (413) 587-1376 x 307, or e-mail questions to her at: pkuzdeba@nohodpw.org

Information on stormwater was contributed by Doug McDonald, the DPW's Stormwater Environmental Planner.

Information on grease was contributed by Charlene Shea, the DPW's Pretreatment Coordinator.

2006 WATER TESTING INFORMATION

INORGANIC SUBSTANCES

Substance (Units)	MCL	MCLG	Highest Level Detected	Detected Level Range	Violation?	Major Sources	
Sodium (ppm)	20	N/A	6.87	5.61 – 6.87	NO	Runoff from stormwater	
Nitrates (ppm)	10	10	2.02	1.09 – 2.02	NO	Runoff from fertilizer use, leachate from septic systems, erosion of natural deposits	
Barium (ppm)	2.0	2.0	.253 (2002 results)	.034-.253	NO	Natural sources	
Substance (Units)	AL	MCLG	Sampling Sites Exceeding AL	Violation?		Major Sources	90 th Percentile
Lead (ppb)	15	0	0	NO		Corrosion of household plumbing system; erosion of natural deposits	5.6
Copper (ppm)	1.3	1.3	0	NO		Corrosion of household plumbing system; erosion of natural deposits	.237

ORGANIC COMPOUNDS

Substance (Units)	MCL	MCLG	Range Detected	Annual Running Average	Violation?	Major Sources	
Total Trihalomethanes (TTHMs) (ppb)	80	0	40.9 – 98.0	67.49	NO	By-product of drinking water disinfection	
Haloacetic Acids (HAA5's) (ppb)	60	0	0.0 – 118.2	57.64	NO	By-product of drinking water disinfection	

MICROBIOLOGICALS

Substance (Units)	MCL/MRDL	MRDLG	Highest Monthly Value	Range Detected	Violation?	Major Sources	
Turbidity (NTU)	TT= 5NTU	N/A	2.695	0.297 – 2.697	NO	Soil Runoff	
Chlorine Residual (in distribution system) (ppm)	4	4	N/A	0.04 – 1.43 Annual Running Avg: 0.77	NO	Water additive used to control microbes	
Total Organic Carbon (TOC) (ppm)	TT	N/A	3.32	1.3 – 3.37	NO	Naturally occurring organic materials, (leaves, etc.)	

RADIONUCLIDES

Substance (Units) 2003 RESULTS	MCL	MCLG	Highest Level Detected	Detected Level Range	Violation?	Major Sources	
Radium 226 Activity (pCu/L)	5	0	0.3	0 – 0.3	NO	Erosion of natural deposits, naturally occurring.	
Gross Beta Activity (pCi/L)	50 (4 mRem/yr*)	0	2.3	0 – 2.3	NO	Erosion of natural deposits, naturally occurring	

DISINFECTION BYPRODUCTS & UNREGULATED CONTAMINANT MONITORING RULE (UCMR) **

Substance (Units)	MCL / MRL	MCLG	Range Detected	Major Sources	
Sodium (ppm) Source: City Wells	20	N/A	4.15 – 11.5 2002 results	Runoff from stormwater	
Bromodichloromethane (ppb)	N/A	N/A	2.3 – 2.6	Trihalomethane: by-product of drinking water chlorination	
Chloroform (ppb)	N/A	N/A	2.2 – 39.8	Trihalomethane: by-product of drinking water chlorination, (in non-chlorinated sources, Chloroform may be naturally occurring.	
Sulfate (ppm)	N/A	N/A	5.18 – 10.5	Natural Sources	